National Institute of Environmental Health Sciences

A time series study on the effects of cold temperature on road traffic injuries in Seoul, Korea

Author(s): Lee WK, Lee HA, Hwang SS, Kim H, Lim YH, Hong YC, Ha EH, Park H
Year: 2014
Journal: Environmental Research. 132: 290-296

Abstract:

Objective: Although traffic accidents are associated with weather, the influence of temperature on injuries from traffic accidents has not been evaluated sufficiently. The objective of this study was to evaluate the effect of temperature, especially cold temperatures, on injuries from traffic accidents in Seoul, Korea. We also explored the relationship of temperature with different types of traffic accident. Methods: The daily frequencies of injuries from traffic accidents in Seoul were summarized from the integrated database established by the Korea Road Traffic Authority. Weather data included temperature, barometric pressure, rainfall, snow, and fog from May 2007 to December 2011. The qualitative relationship between daily mean temperature and injuries from traffic accidents was evaluated using a generalized additive model with Poisson distribution. Further analysis was performed using piecewise linear regression if graph the showed non-linearity with threshold. Results: The incidence of injuries was 216 per 100,000 person-months in Seoul. The effect of temperature on injuries from traffic accidents was minimal during spring and summer. However, injuries showed a more striking relationship with temperature in winter than in other seasons. In winter, the number of injuries increased as the temperature decreased to

Source: http://dx.doi.org/10.1016/j.envres.2014.04.019

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Meteorological Factors, Precipitation, Temperature, Other Exposure

Temperature: Extreme Cold, Fluctuations

Other Exposure: Fog

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: Other Asian Country

Other Asian Country: South Korea

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Injury

Population of Concern: A focus of content

Population of Concern: ☑

populations at particular risk or vulnerability to climate change impacts

Elderly

Other Vulnerable Population: Women

Resource Type: ☑

format or standard characteristic of resource

Research Article

Timescale: ☑

time period studied

Time Scale Unspecified